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EPA COMBINED HEAT AND POWER PARTNERSHIP

Energy Independence and Security Act of 2007: Key Provisions Affecting Combined Heat and Power

On December 19, 2007, President Bush signed the Energy Independence and Security Act of 2007 (EISA) into law.

Notably, the final signed version of EISA did not extend the expiration dates of either the Renewable Electricity Production Credit (REPC) or the Clean Renewable Energy Bonds (CREBS), two federal incentives under which renewably fueled combined heat and power (CHP) would have been eligible. It does, however, create several new programs and amends existing programs applicable to CHP and renewable energy from biomass. These include:

- Recoverable Waste Energy Inventory Program
- Waste Energy Recovery Incentive Grant Program
- Revised renewable fuel standard (RFS2)
- Grants for the production of advanced biofuels
- Clean Energy Application Centers
- Energy-Intensive Industries Program
- Energy Efficiency and Conservation Block Grant Program
- Renewable energy construction grants
- Express loans for renewable energy

To view the full text of the Act, visit http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h6enr.txt.pdf

Recoverable Waste Energy Inventory Program

Established under Section 451 of EISA, the Recoverable Waste Energy Inventory Program will include an ongoing survey (i.e., *Registry of Recoverable Waste Energy Sources*) of all major industrial and large commercial combustion sources and sites in the United States. The program will also include a review of the quantity and quality of waste energy produced at each source.

- EPA will calculate the total quantities of potentially recoverable waste energy from sources at the sites, nationally and by state, and make public:
  - » The total quantities of waste energy produced at each source.
  - » Information on the criteria pollutant and GHG emissions savings that might be achieved with recovery of the waste energy from all sources and sites listed on the Registry.
- For each site listed in the Registry, at the request of the owner or operator of the site, EPA will offer, in cooperation with the U.S. Department of Energy (DOE) Clean

Energy Application Centers, suggestions for optimum means of recovery of value from the waste energy stream in the form of electricity, useful thermal energy, or other energy-related products.

- To be included in the Registry, a project at the site must be economically feasible (i.e., it must offer a payback of invested costs not later than five years after the date of first full project operation, including incentives offered under Section 451 of EISA).
- Projects proposed for inclusion in the Registry cannot be developed or used for the primary purpose of making sales of excess electric power.

DOE will:

- Provide technical support for waste energy recovery to owners or operators of combustion sources.
- Offer partial funding (in an amount equal to not more than one-half of total costs) for feasibility studies to confirm whether or not investment in recovery of waste energy or CHP at a source would offer a payback period of five years or less.

For fiscal years 2008 through 2012, $1 million per year is authorized for EPA to create and maintain the Registry, and for services authorized under the program; $2 million is authorized each year for DOE to assist site or source owners and operators in determining the feasibility of projects; and $5 million is authorized to provide funding for State energy office functions.

Waste Energy Recovery Incentive Grant Program

Section 451 of EISA creates several programs, including the Waste Energy Recovery Incentive Grant Program.

This program provides incentive grants to owners and operators of projects that either produce electricity or incremental useful thermal energy through waste energy recovery. It also provides grants to utilities that purchase or distribute the electricity from these projects, and to states that have achieved at least 80 percent of recoverable waste heat recovery opportunities. The specifics of the program are yet to be established, including requirements for grant awards; however, the incentive structure is as follows:

- Excess electric energy
  - » Waste energy recovery—$10 per megawatt-hour (MWh) of documented electricity produced from recoverable waste energy during the first three years of production.
  - » Utilities—50 percent of the grant attributable to the net excess power produced by a project is payable to the utility that purchased or transmitted that excess power.
- Useful thermal energy – $10 for each 3,412,000 Btus of excess thermal energy from waste energy recovery that is used for a purpose different from that which a project was primarily designed.

Grants are not available under this program for CHP or waste heat recovery projects that qualify for specific federal tax incentives.

Additional incentives for the recovery, use, and prevention of industrial waste energy are included in section 374 of EISA via the amendment of the Energy Policy and Conservation Act.

Funding levels for this program are $100 million for 2008 and $200 million for each of fiscal years 2009 through 2012, subject to appropriations.

Revised Renewable Fuel Standard (RFS2)

The RFS program established by EPACT 2005 required 5.4 billion gallons of renewable fuel in 2008. Section 202 of EISA increases the standard to 9 billion gallons in 2008, with further annual increases in mandated volumes, culminating at 36 billion gallons in 2022. EISA also establishes new categories of renewable fuel.

EPACT 2005 established standards for two categories of renewable fuels: one standard for the total volume of renewable fuel, and a second standard for cellulosic ethanol, requiring 250 million gallons beginning in 2013. RFS2 increases the number of renewable fuel categories and standards from the current two to a total of four— including total renewable fuel and three new categories— advanced biofuels, biomass-based diesel, and cellulosic biofuels—each with their own required volumes. Industry will be required to demonstrate compliance with the four separate fuel standards.

EISA extends the RFS program to include both nonroad gasoline and diesel fuel volumes. Under the regulations implementing EPACT 2005, RFS volume requirements were applied only to producers and importers of onroad gasoline. RFS2 extends this program to both nonroad gasoline and diesel fuel volumes.

As part of its restructuring of the renewable fuel mandate, EISA increases the cellulosic biofuel mandate from 250 million to 1 billion gallons by 2013, with additional annual increases to 16 billion gallons in 2022, and provides a new definition of this fuel. Implementing these requirements will entail additional work by EPA as it develops its upcoming regulation.

RFS2 also establishes for the first time minimum volume standards for biomass-based diesel fuel. These standards begin in 2009 at 500 million gallons and ramp up to 1 billion gallons per year in 2012, and thereafter. To qualify as biomass-based diesel, the renewable fuel portion of the biodiesel blend must result in greenhouse gas (GHG) emissions that are at least 50 percent lower than the baseline GHG emissions for petroleum-based diesel fuel (RFS2 establishes the baseline year as 2005).

New provisions were included in EISA that require the Agency to apply life-cycle GHG performance threshold standards to each category of renewable fuel. In addition, certain requirements in RFS2 pertain only to renewable fuel production facilities that commence construction after the bill was passed. EPA will need to carefully consider how the terms in this new provision should be interpreted and defined in the context of the new law.

The applicable volumes, in billions of gallons, under RFS2 are as follows:

Year	Cellulosic Biofuel	Biomass-Based Diesel	Other Advanced Biofuel[1]	Total Advanced Biofuel	Other Biofuel[2]	Total Renewable Fuel
2006					*4.0*	**4.0**
2007					*4.7*	**4.7**
2008					*9.0*	**9.0**
2009		0.5	*0.1*	0.6	*10.5*	**11.1**
2010	0.10	0.65	*0.2*	0.95	*12.0*	**12.95**
2011	0.25	0.8	*0.3*	1.35	*12.6*	**13.95**
2012	0.50	1.0	*0.5*	2.0	*13.2*	**15.2**
2013	1.00	1.0	*1.75*	2.75	*13.8*	**16.55**
2014	1.75	1.0	*2.0*	3.75	*14.4*	**18.15**
2015	3.00	1.0	*2.5*	5.5	*15.0*	**20.5**
2016	4.25	1.0	*3.0*	7.25	*15.0*	**22.25**
2017	5.50	1.0	*3.5*	9.0	*15.0*	**24.0**
2018	7.00	1.0	*4.0*	11.0	*15.0*	**26.0**
2019	8.50	1.0	*4.5*	13.0	*15.0*	**28.0**
2020	10.50	1.0	*4.5*	15.0	*15.0*	**30.0**
2021	13.50	1.0	*4.5*	18.0	*15.0*	**33.0**
2022	16.00	1.0	*5.0*	21.0	*15.0*	**36.0**

Source: Energy Independence and Security Act of 2007 (HR 6)

Note: Values in *italics* calculated from RFS values as found in the 2007 Act.

[1] Other Advanced Biofuel = Advanced Biofuel – Cellulosic Biofuel – Biomass-Based Diesel

[2] Other Biofuel = Total Renewable Fuel – Total Advanced Biofuel

Grants for the Production of Advanced Biofuels

Section 207 of EISA establishes a new grant program to encourage the production of advanced biofuels. Grants will be awarded to advanced biofuel projects that (1) provide the greatest reduction in life-cycle GHG emissions compared to the comparable motor vehicle fuel lifecycle emissions during calendar year 2005, and that (2) achieve at least an 80 percent reduction in life-cycle GHG emissions. Total funding for the period of fiscal years 2008 through 2015 is set at $500 million, subject to appropriations.

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Clean Energy Application Centers

Under Section 375 of EISA, the DOE Regional CHP Application Centers are renamed "Clean Energy Application Centers." The centers will operate a program to encourage deployment of clean energy technologies through education and outreach to building and industrial professionals and other individuals and organizations with an interest in efficient energy use, and will provide project-specific support to building and industrial professionals through assessments and advisory activities.

Grants will be made to universities, research centers, and other appropriate institutions to ensure the continued operations and effectiveness of eight Regional Clean Energy Application Centers. A total of $10 million for each of fiscal years 2008 through 2012 will be made available, subject to appropriations. The centers will:

- Develop and distribute informational materials on clean energy technologies, including continuation of the eight Web sites existing when EISA was enacted.
- Develop and conduct target market workshops, seminars, internet programs, and other activities to educate end users, regulators, and stakeholders in a manner that leads to the deployment of clean energy technologies.
- Provide or coordinate onsite assessments for sites and enterprises that might consider deployment of clean energy technology.
- Perform market research to identify high-profile candidates for clean energy deployment.
- Provide consulting support to sites considering deployment of clean energy technologies.
- Assist organizations developing clean energy technologies in overcoming barriers to deployment.
- Assist companies and organizations with performance evaluations of any implemented clean energy technology.

Energy-Intensive Industries Program

This program, established under Section 452 of EISA, directs DOE, in cooperation with energy-intensive industries and national industry trade associations representing these industries industries, to support, research, develop, and promote the use of new materials processes, technologies, and techniques to optimize energy efficiency and the economic competitiveness of U.S. industrial and commercial sectors.

Under the program, DOE will issue competitive grants for innovative technology research, development and demonstrations to universities, individual inventors, and small companies, based on energy savings potential, commercial viability, and technical merit. Grants will be awarded to projects that:

- Increase the energy efficiency of industrial processes and facilities.
- Research, develop, and demonstrate advanced technologies capable of energy intensity reductions and increased environmental performance.

- Promote:
  - » The use of feedstock and recycling research, development, and demonstration activities.
  - » Research to develop and demonstrate technologies and processes that utilize alternative energy sources to supply heat, power, and new feedstocks for energy-intensive industries.
  - » Research to achieve energy efficiency in steam, power, control system, and process heat technologies, and in other manufacturing processes.
  - » Industrial and commercial energy efficiency and sustainability assessments.
  - » The incorporation of technologies and innovations that would significantly improve the energy efficiency and utilization of energy-intensive commercial applications.

Energy Efficiency and Conservation Block Grant Program

Section 542 of EISA specifies that DOE will establish a grant program to assist states, local governments, and Indian tribes in implementing strategies to reduce fossil fuel emissions created as a result of activities within the jurisdictions of eligible entities; to reduce the total energy use of the eligible entities; and to improve energy efficiency in transportation, building, and other appropriate sectors.

$2 billion will be available, subject to appropriations, for each of fiscal years 2008 through 2012, with 68 percent of grant funds distributed to eligible units of local government, 28 percent to states, 2 percent to Indian tribes, and 2 percent for competitive grants.

Eligible entities may use grants for:

- The establishment of financial incentive programs for energy efficiency improvements.
- The application and implementation of energy distribution technologies that significantly increase energy efficiency, including distributed resources and district heating and cooling systems.
- The purchase and implementation of technologies to reduce, capture, and, to the maximum extent practicable, use methane and other GHGs generated by landfills or similar sources.
- The development, implementation, and installation, on or in any government building of the eligible entity, of onsite renewable energy technology that generates electricity from renewable resources, including solar energy, wind energy, fuel cells, and biomass.
- Any other appropriate activity, as determined by the Secretary of Energy, in consultation with the Administrator of EPA, the Secretary of Transportation, and the Secretary of Housing and Urban Development.

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Renewable Energy Construction Grants

Section 803 of EISA provides for Renewable Energy Construction Grants for renewable energy projects, including those that generate electricity from biomass (as defined in section 203(b) of the Energy Policy Act of 2005 (42 U.S.C. 15852(b)) and landfill gas. DOE will award the grants, and award criteria will be established at a later date. Each applicant that receives a grant under this program must contribute at least 50 percent of the project funds. A specific appropriations amount is not specified, but EISA authorizes such appropriations as necessary to carry out the program.

Express Loans for Renewable Energy

Section 1201 of EISA creates a program for express loans for renewable energy and energy efficiency. Through the Small Business Administration, loans can be made under the Express Loan Program for the purposes of purchasing a renewable energy system. A renewable energy system is a system of energy derived from a category of sources, of which biomass (including animal wastes and other waste materials) is included. Biomass does not include unsegregated solid waste. The Act does not specify authorized appropriations or the amount of funds available through this program.